

3. Write the multiplication sentence modelled by each set of algebra tiles.



4. For each set of algebra tiles in question 3, write a division sentence.

6. Which of these quotients is modelled by the algebra tiles below?

a) $\frac{8t - 12}{-4}$

b) $\frac{-8t - 12}{4}$

c) $\frac{8t - 12}{4}$



8. a) Divide.

i) $\frac{12k}{4}$

ii) $(-12k) \div 4$

iii) $\frac{12k}{-4}$

iv) $(-12k) \div (-4)$

- b) In part a, explain why some answers are the same.
c) For which quotients in part a could you have used algebra tiles? For each quotient, sketch the tiles you could use.

13. Use algebra tiles to determine each quotient. Sketch the tiles you used. Record the product symbolically.

a) $\frac{12p - 18}{6}$

b) $\frac{-6q^2 - 10}{2}$

c) $\frac{5h^2 - 20h}{5}$

d) $\frac{4r^2 - 16r + 6}{2}$

e) $\frac{-8a^2 + 4a - 12}{4}$

f) $\frac{6x^2 + 3x + 9}{3}$

14. Here is a student's solution for this question:

Divide: $(-14m^2 - 28m + 7) \div (-7)$

$$\begin{aligned} & (-14m^2 - 28m + 7) \div (-7) \\ &= \frac{-14m^2}{-7} + \frac{-28m}{-7} + \frac{7}{-7} \\ &= 2m^2 - 4m + 0 \\ &= -2m \end{aligned}$$

Identify the errors in the solution, then write the correct solution.

16. Use any strategy to determine each quotient.

a) $\frac{24d^2 - 12}{12}$

b) $\frac{8x + 4}{4}$

c) $\frac{-10 + 4m^2}{-2}$

d) $(25 - 5n) \div (-5)$

e) $(-14k^2 + 28k - 49) \div 7$

f) $\frac{30 - 36d^2 + 18d}{-6}$

g) $\frac{-26c^2 + 39c - 13}{-13}$

18. Assessment Focus

- a) Determine each product or quotient.

i) $(3p)(4)$ ii) $\frac{-21x}{3}$

iii) $(3m^2 - 7)(-4)$

iv) $\frac{-2f^2 + 14f - 8}{2}$

v) $(6y^2 - 36y) \div (-6)$

vi) $(-8n + 2 - 3n^2)(3)$

- b) List the products and quotients in part a that can be modelled with algebra tiles. Justify your selection.
c) Sketch the tiles for one product and one quotient in part a.

20. a) The perimeter of an equilateral triangle is represented by the polynomial

$$15a^2 + 21a + 6.$$

Determine the polynomial that represents the length of one side.

- b) Determine the length of one side when $a = 4$ cm.

23. Determine each quotient.

a) $(3n^2 - 12mn + 6m^2) \div 3$

b) $\frac{-6rs - 16r - 4s}{-2}$

c) $\frac{10gh - 30g^2 - 15h}{5}$

d) $(12t^2 - 24ut - 48t) \div (-6)$

24. The area of a circle is given by the monomial πr^2 .

Write, then simplify a polynomial for the shaded area in this diagram:

